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|--|-------------|-----------------------------|------------------------|------------------|
| 10/733,796   | 12/11/2003  | Ananda Chinniah Sankaran    | 016295.1470 (DC-05374) | 8188             |
| 23640 7590 09/03/2009<br>BAKER BOTTS, LLP<br>910 LOUISIANA<br>HOUSTON, TX 77002-4995 |             |                             |                        |                  |
| EXAMINER<br>ZHE, MENG YAO  |             |                             |                        |                  |
| ART UNIT<br>2195   |             | PAPER NUMBER                |                        |                  |
| NOTIFICATION DATE<br>09/03/2009  |             | DELIVERY MODE<br>ELECTRONIC |                        |                  |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

debbie.allen@bakerbotts.com

### Office Action Summary

**Application No.**

10/733,796

**Applicant(s)**

SANKARAN ET AL.

**Examiner**

MENGYAO ZHE

**Art Unit**

2195

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1.5-13, 16-20, 22 and 23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 5-13, 16-20, 22-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. Claims 1, 5-13, 16-20, 22-23 are presented for examination.

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 5-13, 16-20, 22-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a. The following claim languages are unclear and indefinite:

- i) Claim 1, it is uncertain what constitutes as a "performance-related characteristic" <i.e. this is so broad that it could be interpreted to be many things. Is it the load? The capability? The execution time?>.

It is unclear what is meant by transforming the calendar <i.e. what does it get transformed to? Why is it needed? Say if a,b,c were executing on a failing-over node with that order? does transforming mean that instead of abc, it will have to execute in the order of b,a,c when it is transferred to the fail-over node?>

Claims 10, 17 have the same deficiencies as claim 1 above.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 5-13, 16-20, 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roselli et al., Patent No. 6,718,486 (hereafter Roselli) in view of Leigh, Pub. No. 2003/0158940 (hereafter Leigh) further in view of Sankaranarayan, Foltz et al., Patent No. 6,799,208 (hereafter Foltz).
4. Roselli and Leigh were cited in the previous office action.
5. As per claims 1, 10, 16, 17 and 22, Roselli teaches a method for allocating application processing operations among information handling system cluster resources in response to a fail-over event (Column 9, lines 44-48), comprising:
- calculating performance measurements for a failing-over cluster node and a fail-over cluster node (Column 9, line 63-Column 10, line 5; Column 10, lines 10-22, lines 25-39; Column 19, lines 53-57);
- transforming a first calendar schedule associated with failing-over application processing operations into a second calendar schedule to be associated with failing-over application processing operations on the fail-over cluster node based on the calculated performance measurements; and implementing the second calendar

schedule on the fail-over cluster node such that the fail-over cluster node may effect failing-over application processing operations according to the second calendar schedule (Column 9, lines 32-36; Column 10, lines 10-22, lines 25-39; Column 13, lines 32-37; Column 19, lines 53-57).

determining whether resources on the fail-over cluster node are sufficient to support failing-over application processing operations in accordance with the second calendar schedule in addition to any existing fail-over cluster node application processing operations (Column 9, line 63-Column 10, line 5).

Rosellie does not specifically teach calculating a performance ratio between a performance-related characteristic identified for a failing-over cluster node and a similar performance-related characteristic identified for a fail-over cluster node.

However, Leigh teaches calculating a workload ratio between two servers in a cluster for the purpose of using a ratio as a metric to better balance the workload between servers (Para 26, 57).

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to modify the teachings of Roselli where performance measurements for the fail-over and failing-over nodes are calculated, with the specifics of calculating a performance ratio between each server, specifically a workload performance ratio, as taught by Leigh, such that a performance ratio between the fail-over and the failing over nodes are calculated, because it uses a ratio as a metric to better balance the workload between servers.

Rosellie in view of Leigh does not specifically teach in response to determining that the resources of the fail-over cluster node are insufficient to support both failing-over application processing operations in accordance with the second calendar schedule and any existing fail-over cluster node application processing operations, applying a resource negotiation algorithm to the second calendar schedule associated with failing-over application processing operations and calculating a new second calendar schedule for the fail-over node application processing operations based on results from application of the resource negotiation algorithm, the new second calendar schedule providing a reduced operating state for at least a portion of the failing-over application processing operations, but not reducing the operating state for any existing fail-over cluster node application processing operations.

However, Foltz teaches in response to determining that the resources of a system node are insufficient to support both a requesting application processing operations in accordance with a calendar schedule and any existing system node application processing operations, applying a resource negotiation algorithm to the calendar schedule associated with system node processing operations and calculating a new calendar schedule for the requesting application processing operations based on results from application of the resource negotiation algorithm, the new calendar schedule providing a reduced operating state for at least a portion of the requesting application processing operations (Abstract, Column 20, lines 20-38) for the purpose of arriving at a compromise where the requesting application may run at a minimum state on an accepting system node.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to modify the teachings of Rosellie in view of Leigh with determining that the resources of a system node are insufficient to support both a requesting application processing operations in accordance with a calendar schedule and any existing system node application processing operations, applying a resource negotiation algorithm to the calendar schedule associated with system node processing operations and calculating a new calendar schedule for the requesting application processing operations based on results from application of the resource negotiation algorithm, the new calendar schedule providing a reduced operating state for at least a portion of the requesting application processing operation, as taught by Foltz, such that the failing-over application may actually have a place to run on the fail-over cluster, because this allows a compromise where the requesting application may run at a minimum state on an accepting system node.

Rosellie in view of Leigh further in view of Foltz does not specifically emphasize that when the application is transferred, the operating state for any existing fail-over cluster node application processing operations is not reduced. However, since one of the main emphasis of Rosellie is to find a suitable node for the applications from the failed node and doing so in a seamless way (Column 9, lines 32-36; Column 10, lines 10-22, lines 25-39; Column 13, lines 32-37; Column 19, lines 53-57), and since no wherein Rosellie actually teaches that the application on the existing node has to reduce its operational state, it would have been obvious to one having ordinary skill in the art that if a node was chosen to run the application from the failed node, it has to be

capable enough to not only handle that application, but also its own, thus its operating state cannot be reduced for otherwise, it would not have been chosen to be the fail-over node in the first place.

6. As per claim 5, Roselli teaches identifying at least one characteristic of the failing-over cluster node; identifying at least one characteristic of the fail-over cluster node; and calculating the performance ratio between the failing-over cluster node and the fail-over cluster node based on the identified characteristics of each node (Column 19, lines 50-57).

7. As per claim 6, Roselli teaches collecting information handling system cluster node resources required by at least one application to be deployed in an information handling system cluster configuration (Column 10, lines 6-22).

8. As per claim 7, Roselli teaches maintaining a knowledge-base containing information regarding one or more operational aspects of the information handling system cluster (Column 9, lines 30-36; Column 10, lines 23-40).



9. As per claims 8, 18, 19, 20, Roselli teaches determining whether the first calendar schedule for a selected cluster node is feasible using operational aspects of the selected cluster node available in the knowledge-base (Column 9, line 65-Column 10, line 5; Column 19, lines 50-57).

10. As per claims 9 and 23, Roselli teaches updating an application-to-cluster node map identifying the cluster node associated with each application following the allocation of application processing operations among the information handling system resources in response to a fail-over event (Column 13, lines 32-37).

11. As per claims 11-13, Roselli teaches determining whether resources on the fail-over cluster node are sufficient to support failing-over application processing operations in accordance with the second calendar schedule in addition to any existing fail-over cluster node application processing operations (Column 9, line 63-Column 10, line 5).

### ***Response to Arguments***

12. Applicant's argument filed on 2/17/2009 regarding to claims 1, 5-13, 16-20, 22-23 have been fully considered, but they are moot in view of the new ground of rejection.

***Conclusion***

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **MENGYAO ZHE** whose telephone number is (571)272-6946. The examiner can normally be reached on **Monday Through Friday, 7:30 - 5:00 EST**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Meng-Ai An** can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Meng-Ai An/

Supervisory Patent Examiner, Art Unit 2195